PATENTS.

Applicant: J.M. PHILLIPPS. No. 15551

Invention: OPERATING WINDMILLS. Date: 25.10.02

APPLICATION—

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HENRY HUGHES
ESTABLISHED 1862

C O M P L E T E S P E C I F I C A T I O N.

"IMPROVEMENTS IN MEANS FOR AUTOMATICALLY STOPPING AND RE-STARTING WINDMILLS"

I, James Martin Phillipps of Wharepapa, Auckland, in the Colony of New Zealand, Farmer, do hereby declare the nature of my invention for "Improvements in means for automatically stopping and re-starting windmills", and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement,-

This invention relates to improvements upon the invention shewn and described in my New Zealand Letters Patent No. 14516 and dated 4th April 1901. Such invention consisted broadly in the use of a long lever carrying on one end a small water tank and the other end of which was connected to means for turning the sails of the windmill to an angle of rest. The small water tank was filled from the main tank into which the water was pumped by the windmill, and the lever was so arranged with regard to the tank that its tank would be filled when the main tank was full. The filling of the small tank caused that end of the lever to fall and operate the means for turning the sails of the windmill so that the pumping ceased. As the water was drawn off from the main tank the lever tank was also emptied and that end of the lever would again rise so as to allow the sails to be placed in an angle to be operated by the wind and start the pumping.

The present invention has for its object the provision of means whereby the same operations may be carried out, but in which the main tank may be placed at any distance and height from the appliances.

In describing the invention reference will be made to the accompanying sheet of drawings, in which:-

Figure 1 is a side elevation of the appliances.

Figure 2 is a sectional plan of the windmill frame taken on the line 1-2 of Fig. 1, but turned

half round to suit the paper limits.

Upon the cross bar B of the windmill frame or stand A is pivotted a lever C, to the inner end of which is attached a small tank or water vessel D, while to its outer end is attached a counterweight E of such a weight as to overcome the weight of the vessel D when empty.

F is the water tank which may be placed at any suitable elevation above the tank end of the lever C and which is supplied with water by means of the pump operated by the windmills. From the top of the tank F an overflow pipe G leads downwards to beneath the lowest level of the vessel D where it is provided with a T piece connection one branch of which is open and is supplied with a gate or other suitable shut off valve H, while the other branch is in communication with the vessel D by means of a flexible pipe connection J. The valve H is connected to a weighted arm (h) that is pivoted to any suitably fixed point and which by its rising and falling serves to open and close the valve.

Secured within the tank F is a float K attached to one end of a hinged rod (k) so that as the level of the water in the tank rises or falls the rod (k) will be caused to rise or fall on its hinge. A rope L is secured to the rod (k) and passes over guide pulleys (l) and has its other end secured to the weighted arm (h) that operates the valve H.

The inner end of the lever C has connected to it in any suitable manner, a rope or the like M that extends upwards and has its other end secured to means by which the sails of the windmill may be turned round to the angle of rest.

The overflow pipe G, the float K and the arm (h) of the valve H are so arranged in relation to each other that when the level of the water in the tank is below the opening into the overflow pipe, the float will be supported on the water and will keep the arm (h) in its upper position so as to open the valve H, and when the level reaches the point of overflowing the float will be raised causing the rope L to be slackened and the arm (h) to fall so as to close the valve H.

When the windmill is operating the pump, the vessel D on the lever C will be in the raised position shewn in full lines in Figure 1. As the level of the water in the tank rises to the overflowing point, the valve H will be closed and the water passing down the overflow pipe will flow into the vessel D and upon such vessel being filled, its added weight will cause that end of the lever to fall pulling on the rope M so as to turn the sails of the windmill to the position of rest. The pumping operation and the consequent supply of water to the tank will thus cease. As the water is drawn off from the tank and its level falls the valve H will be opened in the manner before described so that the water within the vessel D may flow out through the connection J and T piece. The counterweight E will then cause

the lever C to tip back to its original position releasing the strain on the rope M and allowing the windmill to again come into operation.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is,-

1. A lever pivoted to the frame of a windmill, one end of which is provided with an enclosed vessel and is connected to means for turning the sails of the windmill to an angle of rest and the other end of which is provided with a counterweight, in combination with means whereby such enclosed vessel may be filled with water from the overflow of a storage tank supplied by the operation of the windmill and be emptied of the same when the overflow ceases, as and for the purposes herein set forth.

2. A lever pivoted to the frame of a windmill one end of which is provided with an enclosed vessel and is connected to means for turning the sails of the windmill to an angle of rest and the other end of which is provided with a counterweight, in combination with a water storage tank supplied by the operation of the windmill, an overflow pipe leading from the top thereof, a T piece on the bottom end of the overflow pipe one arm of which is in flexible connection with the enclosed vessel upon the lever, while the other arm is provided with a shut off valve, and means whereby such valve may be closed and opened by the rise and fall of the level of the water in the storage tank, as and for the purposes herein set forth.

3. In means for automatically stopping and re-starting windmills an overflow pipe leading from the water storage tank and the bottom end of which is provided with two branches, one of the branches being in flexible communication with an enclosed vessel upon one end of a counterweighted lever pivoted to the windmill frame, while the other end is provided with a shut off valve, such valve being adapted to open and close by the falling and rising of a weighted arm to which it is connected, in combination with a hinged float within the storage tank capable of rising and falling with the level of the water therein and a rope or other like connection joining the float and the valve arm, as herein specified.

4. The general arrangement construction and combination of parts in my improvements in means for automatically stopping and re-starting windmills, as herein described and explained, as illustrated in the accompanying sheet of drawings and for the several purposes set forth.

Dated this 25th day of October 1902.

Henry T. Coughlin.
Agent for the Applicant

15551.

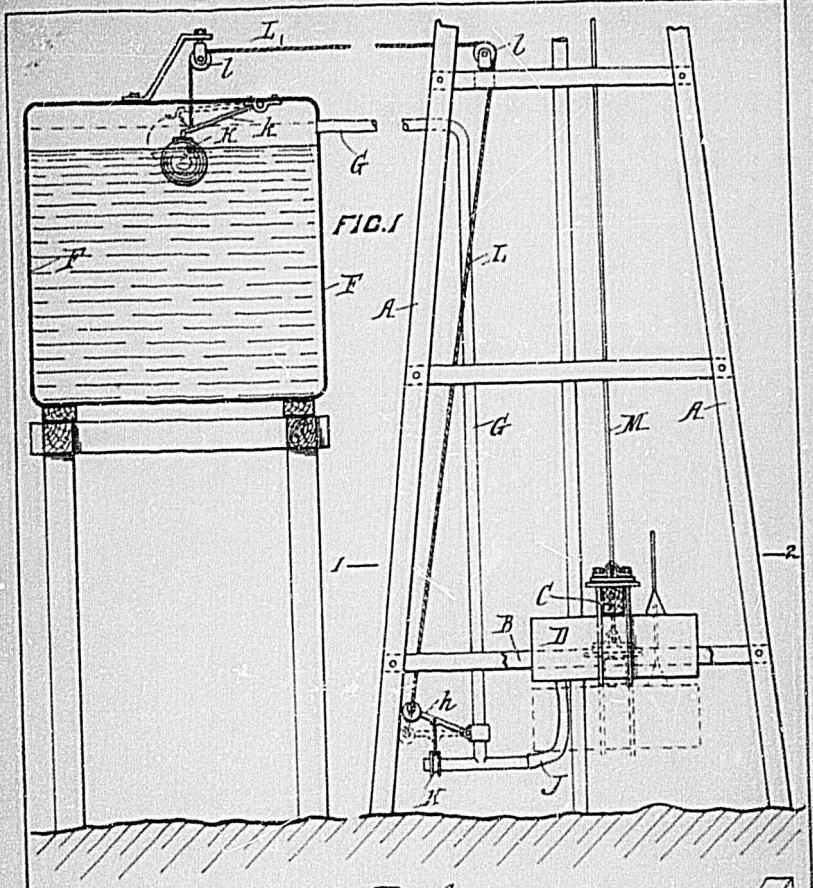


FIG. 1

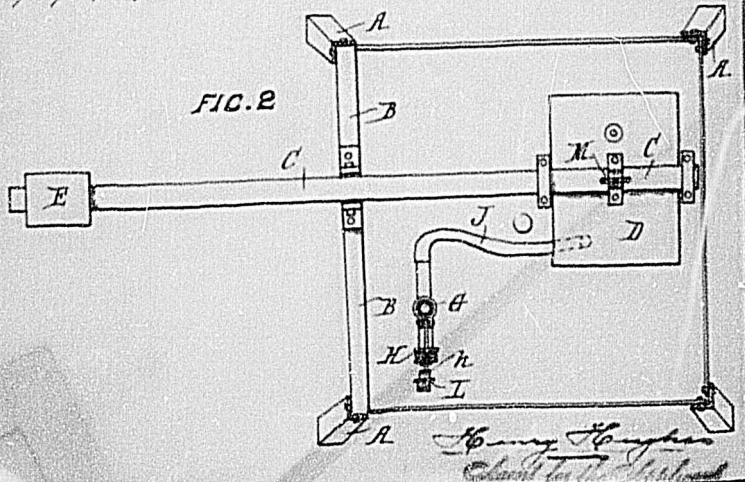


FIG. 2

Henry Hughes